

DOCUMENT RESUME

ED 433 192

SE 061 969

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TITLE Technology in Mathematics Education: Internet Resources.
ERIC Digest.
INSTITUTION ERIC Clearinghouse for Science, Mathematics, and
Environmental Education, Columbus, OH.
SPONS AGENCY Office of Educational Research and Improvement (ED),
Washington, DC.
REPORT NO EDO-SE-98-06
PUB DATE 1998-10-00
NOTE 4p.
CONTRACT RI93002013
AVAILABLE FROM ERIC Clearinghouse for Science, Mathematics, and
Environmental Education, 1929 Kenny Road, Columbus, OH
43210-1080.
PUB TYPE ERIC Publications (071) -- ERIC Digests in Full Text (073)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Computer Software; Educational Resources; *Educational
Technology; Elementary Secondary Education; *Graphing
Calculators; *Mathematics Education
IDENTIFIERS Calculator Based Laboratories; ERIC Digests

ABSTRACT

In this age of digital technology, calculators, computers, and educational software, calculator-based laboratories have become important elements in the learning and teaching of mathematics. This digest provides an annotated listing of World Wide Web resources and contact information for organizations pertaining to technology use in mathematics education. Though not an exhaustive list of everything that is available, the information provided here represents a range of resources as starting points in the quest for information. The list is organized by the following categories: (1) General Technology Sites; (2) Calculators; (3) Calculator-Based Laboratories; and (4) Educational Software. (ASK)

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DIGEST

In this age of digital technology, calculators, computers, educational software, and calculator-based laboratories (CBL) have become important elements in the learning and teaching of mathematics. The National Council of Teachers of Mathematics (NCTM) strongly endorses the increased use of these new technologies in mathematics education.

Mathematics programs must take full advantage of the power of calculators and computers at all levels (NCTM, 1980).

Changes in technology and the broadening of the areas in which mathematics is applied have resulted in growth and changes in the discipline of mathematics itself (NCTM, 1989).

Also, technology makes it easier to locate and access information related to technology uses in mathematics education through the Internet. This Digest presents three types of internet resources related to technology in mathematics education: general technology sites on mathematics education, internet sites related to using calculators, and sites providing or describing mathematics software. In each of the following sections, sites providing more technical information and guidebooks are presented first, followed by sites providing lesson plans and activities using the corresponding technologies.

General Technology Sites

Texas Instruments

<http://www.ti.com/calc/docs/school.htm>

Offers a searchable database and information on school products of Texas Instruments.

Technology Tools For Science And Mathematics Learning

<http://www.uncc.edu/msec/techindx.htm>

Tech tools is a 4-year science and mathematics instructional technologies program, supported in part by a National Science Foundation Teacher Enhancement

Program grant to UNC Greensboro, Grant No. ESI-9355706.

Mathematics Teaching with Computer Algebra, Spreadsheets and Graphing Calculators

<http://www.ee.surrey.ac.uk/Personal/R.Knott/compAlg/GraphCalc.html>

Presents educational resources on technology in math teaching, computer algebra for teaching math, using spreadsheets in math teaching, graphing calculators and math teaching, and how to order books.

TAME

<http://www.edfac.unimelb.edu.au/DSME/TAME/>

The principal aim of the Technology and Mathematics Education (TAME) Web Forum is to develop and support a network of Australian mathematics educators at primary and secondary schools in their attempts to incorporate technology assisted approaches to mathematics teaching and learning. Presents a library of shareware programs and curriculum materials useful for school mathematics, and an email-based support network for mathematics teachers using technology.

Technology Links

<http://www.math.lstu.edu/~day/bmtech.html#technology>

Presents a list of links of web sites for information on calculators and software.

Calculators

Texas Instruments Calculators

Graphing Calculators:

<http://www.ti.com/calc/docs/sgraph.htm>

Provides technical information on graphing Texas instrument calculators.

Nongraphing Calculators:

<http://www.ti.com/calc/docs/ngraph.htm>

Provides technical information on nongraphing Texas Instruments calculators.

Calculator Guide Books

<http://www.ti.com/calc/docs/guides.htm>

Offers quick immediate downloads of calculator guide books.

Hewlett Packard

<http://www.hp.com/calculators/>

Provides detailed information on all calculators produced by Hewlett Packard.

History of Electronic Calculators

<http://www.geocities.com/CapeCanaveral/6747/>

If you are interested in the history of calculators, this is the site you should visit.

Classroom Activities

<http://www.ti.com/calc/docs/activities.htm>

Provides very rich database of lesson plans using Texas Instruments products. You will find activities arranged in the activity matrix by subjects and products. Clicking on a box will lead you to a list of activities fitting the specified categories. You should pay more attention to the "subject" column rather than the "product" row, because most activities can be used with several different products. Note that activities written for a specific product have been sorted by that product, but don't let that discourage you from taking a look.

Mathematics on the Beach

<http://kids.osd.wednet.edu/osd/ttt/Mainpage.html>

This is a collection of Algebra activities using TI-82/83 and CBL developed as part of a summer institute offered through the Teachers Teaching with Technology (T3) organization. The focus of the institute was to enhance algebra through the integration of computers and calculators. Educators from around the region (Washington State) attended the week long program and participated in a number of activities. These included:

- Learning to use a TI-82 and TI-83 graphing calculator.
- Determining how to integrate

technology into algebra curriculum.

- Developing a number of creative hands-on lessons.
- Working with calculator based labs (CBLs) to gather data.
- Development of web pages to share data and ideas.

Lesson Plans for the Graphing Calculator

<http://www.wilpaterson.edu/wpc/pages/icip/itm/Lessonpl/calc/calc.html>

Provides lesson plans using graphing calculators.

Resources for Graphing Calculators in Secondary Mathematics

<http://cesme.utm.edu/resources/math/grcalc/toc.html>

Offers lesson plans, activities, tutorials, and information about graphing calculators.

Connections+1 Mathematics Calculators

<http://www.mcrel.org/connect/plus/calc.html>

Provides lesson plans, activities, teachers' guides using calculators, related content resources, related content standards, and other resources on calculators.

Calculator & CBL Resources

<http://www.cci.unl.edu/calculators/resource.html>

Offers information on Calculator/CBL Computer Resources, Calculator/CBL Text Resources, and Calculator/CBL Experiment Links.

Calculator-Based Laboratory:

Texas Instruments

<http://130.194.180.26/measure/cbl.htm>

Offers technical information on Calculator-Based Laboratory (CBL), workbooks and probes of CBL.

CBL GuideBooks

<http://www.ti.com/calc/docs/cblguide.htm>

Offers immediate download of CBL guidebooks.

Calculator-Based Laboratory System (CBL)

<http://rampages.onramp.net/~jaldr/cbl.html>

If you need basic information on CBL, you need to visit this page to read this informative paper.

Calculator-Based Laboratory System

<http://www.vernier.com/cbl/>

Provides information, curricular materials, and downloadable programs designed to make data collection with CBL and Vernier probes as simple as possible.

TI Calculator & Calculator-Based Laboratory Activities

<http://www.cci.unl.edu/calculators/activities.html>

Offers activities on mathematics and science using calculators and CBLs.

Developers for TI Calculator Based Laboratory

List Name: CBL

List Title: Developers for TI Calculator Based Laboratory

List Owner or Contact: Rob Carlson, rob@cola.castle.net

To subscribe: Send the command JOIN CBL in the body of a message to server@cola.castle.net.

To unsubscribe: Send the command DROP CBL in the body of a message to server@cola.castle.net.

Simplified User's Guide to CBL

http://www2.ncsu.edu/ncsu/pams/science_house/springworkshops97/cbl/cblguide.html

Purposes to provide a fast, easy guide to the use of the combined CBL interface, various probes, and the Texas Instruments (TI)-83 calculator.

Educational Software

Software to Support Mathematics Teaching

<http://www.rmplc.co.uk/eduweb/sites/ufa10/softmath.htm>

Presents a list of educational mathematics software providing links to publishers or sources of corresponding software.

Cornell University

<http://www.tc.cornell.edu/Edu/MathSciGateway/math.html#software>

Presents lists of educational software for mathematics with links to corresponding software webpages. Some of the pages provide information, and others offer software you can download.

Educational Software for the Mac

<http://www.math.ilstu.edu/~day/326SWList.html>

Presents a list of educational mathematics software for Macintosh computers, and provides links to publishers or sources of corresponding software.

Spreadsheets in Mathematics Education

Spreadsheets, Mathematics, Science, and Statistics Education: Quite a Lot of What You always wanted to know

<http://sunsite.univie.ac.at/Spreadsite/spreaded.html>

This page tries to collect some information about spreadsheets with an emphasis on mathematics and statistics education. Presents other web sites on spreadsheets.

Introduction to Math and Spreadsheets

http://forum.swarthmore.edu/sum95/math_and/spreadsheets/intro.html#note

Presents basic information on spreadsheets and mathematics and offers other web sites on this issue.

References

- NCTM (1980). *Agenda for action: Recommendations for school mathematics of the 1980s*. Reston, VA: Author.
- NCTM (1989). *Curriculum and evaluation standards for school mathematics*. Reston, VA: Author.

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